



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,555	05/18/2006	Gunter Rogoll	MSA 265	2113
7590 02/26/2008				
Horst M Kasper 13 Forest Drive Warren, NJ 07059			EXAMINER MOFFAT, JONATHAN	
			ART UNIT 2863	PAPER NUMBER
			MAIL DATE 02/26/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/574,555

**Applicant(s)**

ROGOLL ET AL.

**Examiner**

JONATHAN MOFFAT

**Art Unit**

2863

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/25/2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

Applicant's amendments to the drawings, specification and claims, filed 1/25/2008 and 1/28/2008, are accepted and appreciated by the examiner. Applicant has canceled claim 10, added new claims 17-20 and sufficiently altered the scope of independent claims 1 and 13. As such, all previous objections and rejections are withdrawn and this action is hereby made **final**.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**1.**

Claims 1-2, 7-9, 11-13 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Seccina (US pat 5511223).

With respect to claim 1 and 13, Seccina discloses an apparatus comprising:

1) A modular fieldbus board (Fig 1) comprising a number of fieldbuses (Fig 1 item 40 is the fieldbus module, Fig 5 item 18 shows the fieldbus board itself) connected to a bulk power supply (column 3 lines 64-67).

2) A diagnostic system (Fig 1 item 50 and Fig 4) comprising a monitoring transceiver means (Fig 4 items 12-15) connected to two or more of the number of fieldbuses (Fig 1 items 40) by means of two or more signal injection and/or signal detection points, wherein the points are adapted to inject and/or detect both common mode and differential mode signals (abstract.

According to the knowledge of one of ordinary skill in the art, any two-cable communication line is “adapted to” inject and/or detect such signals. Common mode is simply the average of the two line signals and thus both exist at the same time), and wherein the points are interposed between the bulk power supply and the fieldbus trunk, such that the monitoring transceiver means can detect one or more fieldbus physical layer characteristics between two of the two or more of said points (Figs 4 and 5).

3) A first digital and/or analog interface separate from the field bus trunk and adapted to transmit diagnostic data detected by the monitoring transceiver means directly to an associated digital or analog device (Fig 1 item 82 vs. “test cable and connector” which is the “fieldbus trunk”).

With respect to claim 2, Seccina discloses the fieldbus physical layer characteristics comprise one or more of: over/under termination, noise/ripple level, signal level, signal bias, signal jitter, signal ringing, signal distortion, signal attenuation, cross talk, unbalance, and earth leakage (column 4 lines 21-50).

With respect to claim 7, Seccina discloses a first digital and/or an analogue interface, is adapted to receive operating commands from an associated digital or analogue device (Fig 1 item 60 and claim 2).

With respect to claim 8, Seccina discloses a second digital and/or an analog interface, such that diagnostic data detected and/or alarm created by the monitoring transceiver means during use are transmitted to other associated diagnostic systems (Fig 1 item 60 this workstation is another system associated).

With respect to claim 9, Seccina discloses a visual means to display diagnostic data (Fig 1 item 60 and claim 2). “Provided with” is not limited to “integral to”.

With respect to claim 11, Seccina discloses that the monitoring transceiver means is connected to the bulk power supply (column 3 lines 64-67).

With respect to claim 12, Seccina discloses signal detection points are disposed within hardware carried on the board (Fig 5).

With respect to claim 20, Seccina discloses an apparatus comprising:

- 1) A bulk power supply (Figs 1 and 5 and column 3 line 58 – column 4 line 7).
- 2) A plurality of fieldbuses (Fig 1 item 40) including a fieldbus trunk (Fig 1 item "test cable and connector" and all power connections shown in Fig 5) and connected to the bulk power supply (Fig 1). Without power the apparatus would not function.
- 3) Two or more signal injection and/or signal detection points, wherein the points are adapted to inject and/or detect both common mode and differential mode signals, and wherein the points are interposed between the bulk power supply and the fieldbus trunk (Fig 5 shows connections for all such test and response signals. See above comments in claims 1 and 13 concerning “common mode and differential mode signals”).
- 4) A diagnostic system comprising monitoring transceiver means connected to two or more of the plurality of fieldbuses by means of two or more signal injection and/or signal detection points, such that the monitoring transceiver means can detect one or more fieldbus physical layer characteristics between two of the two or more of said points (Fig 1 item 50).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eryurek (US pat 6859755) in view of DelaCruz (US pat pub 20040073402).

With respect to claim 1 and 13, Eryurek discloses an apparatus comprising:

1) A modular fieldbus board (Fig 1 item 18) comprising a number of fieldbuses (Fig 1 items 20 and Fig 2 each of which is a fieldbus unit in loop 18) connected to a bulk power supply (Fig 2 item 30).

2) A diagnostic system (Fig 2 item 36) comprising a monitoring transceiver means (Fig 2 item 32) connected to two or more of the number of fieldbuses (Fig 1 items 20) by means of two or more signal injection and/or signal detection points, wherein the points are adapted to inject and/or detect both common mode and differential mode signals (According to the knowledge of one of ordinary skill in the art, any two-cable communication line is "adapted to" inject and/or detect such signals. Common mode is simply the average of the two line signals and thus both exist at the same time), and wherein the points are interposed between the bulk power supply and the fieldbus trunk, such that the monitoring transceiver means can detect one or more fieldbus physical layer characteristics between two of the two or more of said points (Fig 2).

3) A first digital and/or analog interface separate from the field bus trunk and adapted to transmit diagnostic data detected by the monitoring transceiver means directly to an associated

digital or analog device (Fig 2 item 32, for isolation, or Fig 4 item 206 also for isolation and separated monitoring communication).

With respect to claim 2, Eryurek discloses the fieldbus physical layer characteristic comprises, at least noise/ripple level (column 3 line 66).

With respect to claim 3, Eryurek discloses that the monitoring transceiver means also detects one or more characteristics of hardware carried on the modular fieldbus board by means of one or more of said points (column 4 lines 35-38).

With respect to claim 4, Eryurek discloses that the one or more characteristics of hardware comprise one or more of: voltage, short circuit, hardware module failure, quiescent current, and rate of charge (column 4 lines 35-38).

With respect to claim 5, Eryurek discloses that the monitoring transceiver means is adapted to gather received data and produce one or more of: Fourier analysis, trending analysis, and data logging. (column 4 lines 10-21).

With respect to claim 6, Eryurek discloses that the monitoring transceiver means is adapted to provide an alarm in the event that received data indicates one or more of pre-determined failures has occurred on any of the two or more fieldbuses (column 4 lines 14-16 and 19-21) and in which the first digital and/or analog interface is adapted to transmit said alarm directly to an associated digital or analog device (this is inherent, just like a “displaying” function necessitates a “display”, an alarming function necessitates an “alarm” which, being responsive to an electrical signal must be EITHER analog OR digital).

With respect to claim 7, Eryurek discloses that the first digital and/or an analogue interface is adapted to receive operating commands from an associated digital or analog device (column 4 19-21).

With respect to claim 8, Eryurek discloses a second digital and/or an analogue interface, such that diagnostic data detected and/or alarms created by the monitoring transceiver means in use are transmitted to other associated diagnostic systems (Fig 1 item 14).

With respect to claim 9, Eryurek discloses a visual means to display diagnostic data (Fig 1 item 12 and column 4 19-21).

With respect to claim 11, Eryurek discloses that the monitoring transceiver means is connected to the bulk power supply (Fig 2 item 30).

With respect to claim 12, Eryurek discloses signal detection points are disposed within hardware carried on the board (Fig 2).

With respect to claim 1 and 13, Eryurek fails to specify fieldbus physical layer characteristics between two of the two or more of said points.

DelaCruz teaches, with respect to claims 1 and 13:

2) A diagnostic system (Fig 1 item 22) comprising a monitoring transceiver means connected to one or more of the number of fieldbuses (Fig 1) by means of two or more common mode and/or differential mode signal injection and/or signal detection points, which points are dispersed between the bulk power supply and the fieldbus trunk, such that the monitoring transceiver means can detect one or more fieldbus physical layer characteristics between two of the two or more of said points (paragraph 0012).



DelaCruz teaches, with respect to claim 10, that the monitoring transceiver means is removable from the fieldbus board (Fig 1 item 22).

It would have been obvious to one of ordinary skill in the art to modify the apparatus of Eryurek by using a separate handheld diagnostics device as taught by DelaCruz. Eryurek discloses that the monitored quality may be signal noise, which, being a subspecies of “fieldbus layer characteristics” clearly is in the same field of endeavor as DelaCruz. Further, the portable device of DelaCruz reduces cost by eliminating redundant components (i.e. using the same testing circuitry for all modules).

**3.**

Claims 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eryurek and DelaCruz as applied to claims 1 and 13 above, and further in view of Westerfeld (WO 009945621).

With respect to claims 14-19, Eryurek and DelaCruz fail to disclose a power supply converter and conditioner. One of ordinary skill in the art would have found it obvious to put power conditioning and/or conversion onboard such a module to eliminate noise and, especially in the intrinsically safe environment of Eryurek, to prevent sparks or explosions. However, the examiner presents the following reference to show further this obviousness.

Westerfeld teaches, with respect to claims 14 and 17, power supply conversion (Fig 2 item 114) and power supply conditioning (Fig 2 item 1131-113n) in an intrinsically safe fieldbus (abstract) environment (Fig 1 item 1).

It would have been obvious to one of ordinary skill in the art, as stated above to modify the apparatus of Eryurek and DelaCruz by including power conversion and conditioning. Both

Eryurek and Westfeld present the importance for intrinsic safety of such conversion to prevent an accident due to sparking or other power-related issues.

With respect to claims 15-16 and identical claims 18-19, the examiner has given these claims the broadest reasonable interpretation. The examiner maintains that these claims may be interpreted as “common mode signal detection points” being merely points within the system capable of being monitored with an injected or detected signal. The examiner maintains that, under this interpretation, since reference Westerfeld discloses such components connected to each other, these points do exist though they are not being actively monitored.

#### ***Examiner's Comments***

Due to the scarcity of details of the inventive system given in applicant's specification and the fact that “fieldbus” has a wide variety of interpretations, the examiner has presented above what is believed to be the closest and most pertinent prior art.

In applicant's comments, filed 1/25/2008 and 1/28/2008, the applicant failed to provide any clarity to the examiner's previously stated concerns as to the broadness of the term “fieldbus”. The examiner can only assume, for the sake of prosecution, that the interpretations presented in the previous office action were in-line with applicant's understanding and usage of the term.

#### ***Response to Arguments***

Applicant's arguments, filed 1/25/2008 and 1/28/2008, have been fully considered but they are not persuasive.

In the arguments filed 1/28/2008, the applicant argues that in the rejection of claims 1 and 13 over Seccina, the examiner has assigned the label “fieldbus” to both component 40 in figure 1

and simultaneously to items 12-15 in figure 4. The examiner disagrees with this interpretation of the rejection. For clarity, item 40 in figure 1 is a modular fieldbus. Figure 4 merely shows connections within fieldbuses ("monitoring transceiver connected to one or more of the fieldbuses" from the claims).

In the arguments filed 1/25/2008, the applicant points out that reference Seccina discloses only digital connections and components. The examiner does not disagree with these statements but points out that in each relevant claim the language "digital or analog" is used (underline added for emphasis). The examiner points out that, in conventional patent application prosecution, the word "or" is used to imply that these are separate embodiments or options any one of which meets the limitation of the claim language.

On page 15 of applicant's arguments, it is stated that Seccina fails to disclose a display component. Applicant admits however that Seccina discloses the functionality of "displaying". The examiner maintains that a display is an inherent component of a displaying function.

On pages 14-17 of the response, applicant states that reference Seccina fails to disclose the limitations of claims 2 and 10-12. Applicant does not, however present any reasoning or support for these allegations.

On pages 18-22, Applicant again argues that the references fail to meet the claim limitations without explanation or support for these statements. As an example, on page 18 applicant states that cited portion (column 4 lines 35-38) of reference Eryurek fails to disclose "a detected characteristic of hardware comprises one or more of: voltage, short circuit, hardware module failure, quiescent current, and rate of charge." as in claim 4. Presented here is the cited portion of Eryurek:

Art Unit: 2863

identification of the present Link Active Scheduler (LAS).  
35 Finally, diagnostic circuitry 36 can also provide quiescent  
current and voltage rail monitoring of the device electronics  
of field device 20 in order to indicate the continued health,  
or otherwise, of the electronics within field device 20.  
Any of the above individual or combined measurements  
40 themselves provide valuable diagnostic data for the digital

The highlighted portions clearly meet the limitation of the claim language. Again, the examiner points out that, in conventional patent application prosecution, the word "or" is used to imply that these are separate embodiments or options any one of which meets the limitation of the claim language.

Applicant makes further arguments concerning claims 5-16 without any evidence or support and often as in the above case, where the cited portion clearly shows the claimed limitation.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN MOFFAT whose telephone number is (571)272-2255. The examiner can normally be reached on Mon-Fri, from 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/jm/  
2/15/2008  
JM

/John E Barlow Jr./  
Supervisory Patent Examiner, Art Unit  
2863